



PRINTERS FAQ

Q How can I work out how much an inkjet printer costs to run?

Many factors affect the cost of running an inkjet. Some printers use more ink than others, while some inks are more expensive. Ink consumption also depends on how you use the printer: print quality, subject material and even how frequently you use the printer all make a difference. Because there isn't a typical user, it's impossible to predict what printing will cost. The most common ink consumption figures relate to a test pattern that covers five per cent of the page with ink. Manufacturers quote how many pages each colour will last during continuous printing at this level of coverage. The figure is typically around 400 pages per colour for high-yield cartridges, but can be as low as 80 pages for a portable printer.

Computer Shopper calculates the cost per page by dividing the cartridge price by this figure. This gives a reasonable comparison, but relies on each manufacturer using similar test procedures. Even identical printers tested in the same way produce results that differ by a few per cent. There are several ISO test patterns but ISO/IEC 24711, currently under development, will be the first yield-testing method developed for inkjets. Dell's figures for the Photo All-In-One 944 reviewed on page 28 are the first we've seen to be based on the emerging standard. For more details, go to <http://tinyurl.com/dx3hq>.

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REVIEW PORTABLE INKJET PRINTER

HP DeskJet 460c



RATING ★★★★★

PRICE £159 inc VAT

SUPPLIER <http://uk.insight.com>

DETAILS www.hp.co.uk

The choice of notebooks available for computing on the move is mind-boggling, but your options are more limited if you need a mobile printer. HP's DeskJet 460c is in direct competition with Canon's PIXMA iP90, which we reviewed in *What's New, Shopper* June 2005. These two ranges offer the only widely available portable A4 inkjets.

The DeskJet 460 is available in three models, all of which can use a CompactFlash wireless networking card that costs £55 including VAT. The 460wbt comes with a Bluetooth card and a lithium-ion battery. The 460cb includes the battery but not Bluetooth, while the 460c has neither. These extras are available separately, though, so you can upgrade later if you find you need them.

This compact printer weighs only 2kg. HP's £45 battery snaps securely on to the printer's back and adds only 200g. There are slots for CompactFlash, SD and MMC cards. When not in use, the paper input tray folds across the top surface to protect the control buttons and ink compartment.

The DeskJet 460 is about 30mm taller than the PIXMA iP90, but its extra height enables it to use most of HP's standard ink range, including the grey and colour photo cartridges. This makes it cheaper to run. Using the standard-yield black cartridge each mono page costs 2.4p, around six times cheaper than the iP90. Colour pages from the high-yield three-colour cartridge work out at around 4.2p – over three times less than the Canon.

The 460's paper tray can just about take 50 sheets, so we were able to run our full-length print



tests. It delivered our draft text document at 12 pages per minute (ppm) and our mixed colour test at 1.9ppm. Both times are better than those we recorded from the iP90, but at 4.1ppm the 460 was slower to print our formal letter test.

Print quality was as good as that from other HP inkjets we've tested. Text was solid black, with clean outlines at all but the fastest quality settings. On plain paper, colours were more solid and vibrant than those from the iP90, although there was a trace of banding at the Fast Normal and Fast Draft settings. Photos printed with the standard four-ink setup looked fine for most purposes, but when we used an optional three-colour cartridge they were very impressive for a portable inkjet.

The 460 is more expensive than a regular inkjet, but similar in price to its only real competitor. Although slightly bigger than the PIXMA iP90, it is a better printer and costs far less to run.

Simon Handby



Portable, fast and cheap to run; good print quality



Much more expensive than a regular inkjet

SPECIFICATIONS Four-colour inkjet, 4,800x1,200dpi maximum resolution, USB and PictBridge USB interfaces. **Part code** C8150A

HOTLIST LASER PRINTER

SAMSUNG ML-2250



RATING ★★★★★

PRICE £95 inc VAT

SUPPLIER www.savastore.com

DETAILS www.samsung.co.uk

Samsung's ML-2250 takes a single 5,000-page-rated consumable, which is enough for 10 reams of paper; each sheet costing 1.33p to print. Print quality is excellent. This printer has 16MB of memory and a 250-sheet input cassette, so it's well specified. You can also upgrade the memory and add networking. This is a great-value printer.



SPECIFICATIONS Mono laser, 1,200dpi, 20ppm maximum speed, USB Hi-Speed interface. **Part code** ML-2250/XEU

HOTLIST COLOUR LASER PRINTER

EPSON AcuLaser C1100



RATING ★★★★★

PRICE £210 inc VAT

SUPPLIER www.misco.co.uk

DETAILS www.epson.co.uk

Epson's C1100 is reasonably large for a four-pass colour laser, and it's more tricky than many to set up. In our tests it came commendably close to Epson's claimed speeds, but the most welcome discovery was its superb all-round print quality. This is an excellent, inexpensive printer with reasonable running costs.



SPECIFICATIONS Colour laser, 600dpi, 25ppm mono/5ppm colour maximum speed, USB Hi-Speed interface. **Part code** C11C567001

HOTLIST MONO LASER PRINTER

KYOCERA MITA FS-1920n



RATING ★★★★★

PRICE £474 inc VAT

SUPPLIER www.savastore.com

DETAILS www.kyoceramita.co.uk

This compact laser prints for less than half a penny a page, so it could save you a fortune over its 300,000-page lifetime. Toner cartridges are the only consumable, and each lasts for 15,000 pages. The FS-1920n is simple to maintain, but there's plenty of scope for upgrades if your needs increase.



SPECIFICATIONS Mono laser, 1,800x600dpi, 28ppm maximum speed, 10/100 Ethernet, USB and parallel interfaces. **Part code** FS-1920N

REVIEW COLOUR LASER MFP

KONICA MINOLTA Magicolor 2480MF

RATING ★★★★★

PRICE £586 inc VAT

SUPPLIER www.misco.co.uk
DETAILS www.konicaminoltaprinters.co.uk
EXCLUSIVE


MFPs based on colour laser printers used to be too expensive for home users. But printer technology has become more affordable, and Konica Minolta's Magicolor 2480MF is the third entry-level colour laser MFP we've reviewed. It competes directly with our current Best Buy, Epson's AcuLaser CX11NF (see Hotlist below). Neither MFP is exactly cheap, but both fall within the budget of many small businesses and demanding home users.

The 2480MF uses the same print engine as other 2400-series products. These have been around for some time, so consumables are easy to obtain and reasonably priced. The 2480MF arrives with standard-capacity toners that last for only 1,500 pages, but you can replace these with 4,500-page supplies that should keep print costs down to 1.4p per mono page and around 7.5p in colour.

Although large, this MFP was easy to set up. Installing the driver was simple, but Konica Minolta's installer isn't as slick as others we've seen. During the installation process, we had to click past four Windows Logo Testing alerts.

The 2480MF's quoted print speeds are modest, but it came close to them in our tests. It peaked at 18.8 ppm when printing our 50-page draft document. Colour lasers often fail to reach their rated speed on our 24-page mixed colour document, but the 2480MF put in a solid 4.5ppm performance. It was slower when we used the highest print quality to print photographs: two 10x8" photographs took a minute and 17 seconds.

We were happy with the quality of all of our documents. Text was reasonably sharp, business graphics looked crisp and professional, and photos were detailed and natural. The 2480MF's scanner has a 600dpi maximum resolution, so we couldn't perform our 1,200dpi test. A4 previews and scans at 150 and 300dpi all took around 22 seconds. Office documents were captured well, but with under-saturated colours. Photographs were quite dark, and the scanner was very poor at capturing shade detail.

Despite sombre scan results and no fax capability, this is a solid MFP for general office use. At its launch, customers will be able to claim a free Silex network server from Konica Minolta's website, which network-enables all the 2480MF's functions, including the scanner – a generous offer. At this price, though, we'd choose the Epson CX11NF, which is faster and produces better results.

Simon Handby

✓ Good print performance; competitive running costs; network server offer

✗ No fax; disappointing scanner

SPECIFICATIONS 600dpi print resolution, 20ppm mono/5ppm colour maximum speed, 600x600 scan resolution, USB Hi-speed and PictBridge USB interfaces. **Part code** 5250225-200

HOTLIST MULTIFUNCTION PERIPHERAL

HP Photosmart 3210

RATING ★★★★★

PRICE £181 inc VAT

SUPPLIER www.savastore.com
DETAILS www.hp.co.uk


This MFP has everything you need to tackle creative projects. It produces high-quality, cheap prints very quickly on plain or photo paper. The scanner has a high resolution and can capture film, although it does a better job with reflective originals and we don't much care for its TWAIN interface.



SPECIFICATIONS 4,800x1,200dpi print resolution, 4,800x4,800dpi scan resolution, USB Hi-Speed PictBridge USB and 10/100 Ethernet interfaces. **Part code** Q5843B

HOTLIST COLOUR LASER MFP

EPSON AcuLaser CX11NF

RATING ★★★★★

PRICE £594 inc VAT

SUPPLIER www.dabs.com
DETAILS www.epson.co.uk


Multifunction peripherals based on colour laser printers aren't getting any smaller, but they're finally affordable. This hulking Epson is the best example we've tested. It has built-in fax capability, a good scanner and great print quality. It's easy to install and use, but colour prints could be cheaper.



SPECIFICATIONS 600dpi print resolution, 25ppm mono/5ppm colour maximum speed, 600x600dpi scan resolution, USB Hi-Speed and 10/100 Ethernet interfaces. **Part code** C11C588081DA

BYTE SIZE!



Our round-up of the best new gadgets and software

ARTWIZZ ScratchStopper Nano

RATING ★★★★★

PRICE £10 inc VAT

SUPPLIER www.apple.com/ukstore
DETAILS www.artwizz.com

Few things are as covetable as an iPod Nano, but slip it in the wrong pocket and your loose change could ruin its looks. These thin plastic skins aim to prevent such mishaps, and are also available for the full-sized player. Each pack contains a cleaning cloth and two sets of pre-cut skins to protect back, front and screen.

You apply the ScratchStoppers like a plaster but it's hard to avoid trapping air bubbles, which Artwizz says will disappear over a couple of days. It's harder to line up separate front skins without making them overlap. When fitted the skins do a good job, but they won't protect a dropped iPod the way a case does.

Simon Handby


PLAY iBoxer

RATING ★★★★★

PRICE £17 inc VAT

SUPPLIER www.popxpress.com
DETAILS www.playunderwear.com

Not a day goes by without some bright spark sticking a lower-case 'i' somewhere new and creating an iPod accessory. Step up the iBoxer shorts: a pair of cotton underpants for those who can't bear to part from their music. Near the waistband is an 'i pocket' that's just large enough to hold a full-size iPod. They come in a range of colours, but our orange and green pair were a bit of an iSore.

It's tempting to clown around wearing the iBoxers, but after one too many scissor kicks our iPod made a bid for freedom. The iBoxers make a fun but impractical present, and they cost a packet.

Simon Handby




REVIEW MULTIFUNCTION PERIPHERAL

DELL
Photo All-In-One Printer 944

RATING ★★

PRICE £121 inc VAT and delivery

SUPPLIER Dell 0870 907 5818

DETAILS www.dell.co.uk

Dell has a habit of giving its printers matter-of-fact names, and the Photo All-In-One Printer 944 keeps up the tradition. It replaces the Photo All-In-One 942, reviewed in *Labs, Shopper* June 2005, and it looks and feels a lot better. This photo-orientated device is supplied with a black ink and three-colour cartridge but will print six-ink photographs if you buy an £18 Dell photo cartridge.

The 944's front panel has a PictBridge USB port and memory card slots that cover common formats. A hinged 6.3cm colour screen with a sharp picture is built in for direct printing and copying jobs. Dell's menu system is easy to understand, but it stopped responding a couple of times as we browsed an SD card full of high-resolution images.

In print tests, the 944 produced our 50-page draft text document at 13.4ppm, dropping to 8.6ppm when we increased the quality for our formal letter test. The text suffered from untidy outlines at all quality settings. The printer's results in our plain paper mixed-colour test were equally unimpressive, and its slow 1.6ppm performance was also poor.

Photos printed quickly with the standard four-ink setup: the printer took 15 minutes and 38 seconds to produce six borderless 6x4" shots. These lacked detail in the darkest regions and colours were oversaturated. When we repeated the test using six inks, there was little improvement to the speed but the results were much better.

The 944's scanner is quiet, but not particularly quick. Each preview took a reasonable 10.5 seconds,



but the scanner needed 39 seconds to complete a 300dpi A4 scan. At higher resolutions, it was slower still, taking over three minutes to scan a 6x4" photograph at 1,200dpi. The images it captured had similar problems to the four-ink photo prints, with garish colours and little detail in areas of shadow.

Surprisingly, given its underwhelming print and scan performance, the 944 was a decent copier. The default quality setting produced reasonable results, with a colour A4 page taking 44.5 seconds and a mono page just 17 seconds.

Dell's figures (see FAQ on page 26) suggest that each mono page costs three pence and each colour page 4.8p using high-yield supplies. Dell's cartridge prices include delivery, so the 944 should prove cheap to run. But it costs £20 more than Lexmark's P6350, which gave similar results when reviewed in *What's New, Shopper* December 2005.

Simon Handby



Low running costs; easy to use; next-business-day warranty



Unimpressive prints and scans; pricy

SPECIFICATIONS 4,800x1,200dpi print resolution, 1,200x2,400dpi scan resolution, USB Full-speed and PictBridge USB interfaces. **Part code** N/A

CHOOSING A...

LASER
PRINTER

Follow our step-by-step guide to identify your ideal laser

1

Prices for A4 laser printers start at around £70, with specs such as those below. These models are fine for users who print less than one packet of paper a month. Look for good print quality, flexible drivers and running costs below 2p per page. It should ideally hold paper clean and flat in a horizontal tray and allow manual feeding of headed paper and envelopes with no creasing.

2

You must spend more for a printer with the build quality and speed to cope with a heavy workload. Heavy users or small workgroups need up to 25 pages per minute (ppm), and whole departments need even more. Bulk printing demands costs of 1p per page or less.

3

Colour lasers are now available for less than £200, but at this price they will print colour far slower than mono. If colour speed is important, consider spending £400 or more to get a single-pass model.

4

Support for a printer language such as Printer Control Language (PCL) 6 or PostScript 3 means you can use the printer with any computer. Not all lasers print graphics well, but a 1,200dpi resolution helps. Colour lasers can print high-quality graphics, but should have at least 32MB of memory.

5

A network adaptor allows you to connect a printer to an Ethernet network, so all the network users can print to it directly. Smaller groups can use a PC to host and share any printer.

6

Duplex printing is an increasingly affordable option. A scanner/fax unit turns your printer into a MFP. Large groups should get multiple paper trays to deal with headed paper and other stationery.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

RESOLUTION: 600x600dpi

MEMORY: 8MB

SPEED: 12ppm

INTERFACES: USB

PAGES PER MONTH: 5,000

PAPER TRAYS: 150-sheet A4

OPTIONS:

HOTLIST INKJET PRINTER

HP
Photosmart 8250

RATING ★★★★★

PRICE £135 inc VAT

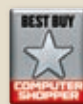
SUPPLIER www.dabs.comDETAILS www.hp.co.uk

The Photosmart 8250 produces excellent print quality on plain or coated paper. It's one of the fastest photo printers we've tested, but it also dashed off our draft text test at 18.5ppm. It has easy-to-use direct photo-printing features, and low running costs make it a superb all-rounder.



SPECIFICATIONS Six-colour inkjet, 4,800x1,200dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces. **Part code** Q3470B

HOTLIST INKJET PRINTER

HP
DeskJet 5940

RATING ★★★★★

PRICE £71 inc VAT

SUPPLIER www.savastore.comDETAILS www.hp.co.uk

A metal lid lends a touch of class to this mid-range inkjet, but the supplied 800-page black cartridge makes it incredibly good value. It's also very fast, reaching 20ppm in our draft text test.



Low mono running costs of 2.2p per page helped it eclipse the competition in our recent inkjet Labs test.

SPECIFICATIONS Four-colour inkjet, 4,800x1,200dpi maximum resolution, USB and PictBridge USB interfaces. **Part code** C9017B